1994 Winter Trial Garden Results

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Auburn University, Alabama

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1994 Winter Trial Garden Results

J. David Williams, Bridget K. Behe, Charles C. Montgomery, James B. Witt, and Lisa M. Beckett[1]

INTRODUCTION

NEARLY 120 BEDDING PLANT CULTIVARS were observed from fall 1993 through spring 1994 in an All America Selections (AAS) Display Garden at the E.V. Smith Research Center in Shorter, Ala. (latitude 32° 30'N, longitude 85° 40'W). This was the third year that trials have been conducted at the center, a unit of the Alabama Agricultural Experiment Station. The objective of this study was to determine the cold tolerance of winter-flowering annual plant cultivars to assist Alabama horticultural professionals in plant selection. Results may vary from year to year as climactic conditions affect cultivar performance.

AAS is a non-profit organization founded in 1932 to encourage the development of superior flower and vegetable cultivars trials. AAS "winners" are selected based on the nationwide trials and communicated through a network of display gardens and printed media. The Auburn University Trial Garden was established at E.V. Smith in 1993, becoming one of 200 such gardens in the U.S. Other Alabama display gardens are at Bellingrath Gardens in Theodore and the Birmingham Botanical Garden. Display gardens offer a convenient means for assessing the general performance of new bedding plant cultivars under Alabama environmental conditions. However, environmental variables such as weather, soil, exposure, and cultural practices can greatly affect plant performance. Comparison of results from several display sites will increase the reliability of the recommendations.

[1]**Williams is an assistant professor, Behe is an associate professor, Montgomery is a graduate research assistant, and Becket is a former research associate in the Auburn University Department of Horticulture. Witt is superintendent of the E.V. Smith Research Center Horticulture Farm.**

METHODS

Seeds of the entries were donated by several companies and grown by a commercial producer in Alabama. Beds were tilled and fumigated with methyl bromide two weeks before planting. Black plastic mulch covered each bed. Twelve plants per entry were spaced nine inches on center in a double row; ornamental kale was spaced 15 inches on center. Transplants were planted on Nov. 8, 1993. Plants were drip irrigated with 200 parts per million of nitrogen 20-10-20 fertilizer as needed until March 23,1994. All plants were grown in full sun. Eight of twelve plants per entry were evaluated every two weeks; the outer four plants were used as guard rows.

Several snapdragon cultivars and one lobelia cultivar were evaluated this year. However, none survived the winter temperatures and were excluded from these results.

Table 1 shows the average daily light levels, average daily air temperature, and total monthly rainfall. Figure 1 shows minimum and maximum daily air temperatures over the duration of the study. Data were provided by the National Weather Service at Auburn University.

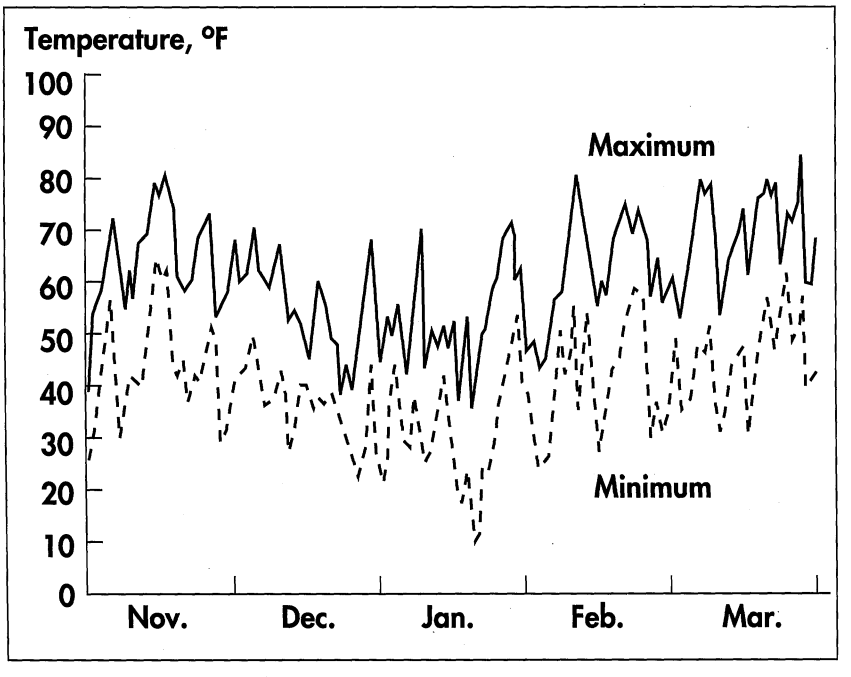


Figure 1. Minimum and maximum air temperatures at the E.V. Smith Research Center during the 1993-1994 Winter Trial.

TABLE 1. SUNLIGHT, TEMPERATURE, AND RAINFALL FROM NOVEMBER 1993 TO MARCH 1994

Month	Average radiation	Average daily temp.	Monthly rainfall
	W/sq. m[1]	*°F*	*In.*
November	3192.0	53.3	3.70
December	2404.5	45.6	3.87
January	2488.3	41.6	5.17
February	3402.0	51.3	4.19
March	4706.9	56.6	6.57

[1]Solar radiation is measured in watts per square meter.

TABLE 2. FIVE HIGHEST RATED PANSY CULTIVARS COMPARED TO THE FIVE LOWEST RATED CULTIVARS[1]

Highest rated cultivars		Lowest rated cultivars	
Cultivar	Rating	Cultivar	Rating
Jewel Light Blue (Takii)	4.6	Roc White (S&G)	1.9
Rally Orange (PanAm)	4.4	Fama Love Me (Benary)	1.8
Fama See Me (Benary)	4.2	Rally White (PanAm)	1.8
Accord Clear Yellow (Gold)	4.0	Regal White w/Rose Bl. (Sakata)	1.6
Jewel Yellow (Takii)	3.9	Accord Blue Blotch (Gold)	1.4

[1]See "Ratings" on page 5 for a description of the rating system.

PANSY

None of the 98 pansy cultivars was spectacular, although several performed respectably. Table 2 illustrates the five highest rated cultivars at the peak level compared to the lowest rated entries.

Yellow cultivars in general received higher ratings than other color groups. Many white cultivars had lower ratings when compared to other colors. Of the 21 yellow cultivars observed, 10 were among the 25 highest rated cultivars. No white cultivars were among the top 25. Conversely, 10 of the 13 white cultivars observed were among the 25 lowest rated entries.

ORNAMENTAL KALE

All of the ornamental kale entries performed generally well. 'Red Chidori' was particularly notable. 'White Kamome' was well established by Jan. 17. Other cultivars made a respectable showing with regard to peak rating on March 21. Within each variety, plants were strikingly uniform in size and color. As of the termination of the test, none of the kale cultivars had bolted.

TABLE 3. TWO HIGHEST RATED CULTIVARS WITHIN EACH COLOR CLASSIFICATION[1]

Variety (source)	Peak rating	Ranking
Blue		
Jewel Light Blue (Takii)	4.6	1
Fama Silver Blue (Benary)	3.8	11
White		
Jewel White (Takii)	3.0	41
Universal White (Gold)	2.8	55
Purple		
Jewel Purple Face (Takii)	3.4	18
Clear Sky Purple (S&G)	3.2	24
Rose		
Accord Rose Blotch (Gold)	3.9	7
Regal Rose w/Blotch (Sakata)	2.8	51
Red		
Universal Red (Gold)	3.8	12
Imperial Wine Fashion (Takii)	3.4	17
Orange		
Rally Orange (PanAm)	4.4	2
Watercolor Melange (Clause)	3.9	6
Yellow		
Fama See Me (Benary)	4.2	3
Accord Clear Yellow (Gold)	4.0	4
Mixed		
Imperial Antique Shades (Takii)	3.4	22
Accord Mix (Gold)	3.1	33

[1]See "Ratings" on page 5 for a description of the rating system.

DIANTHUS

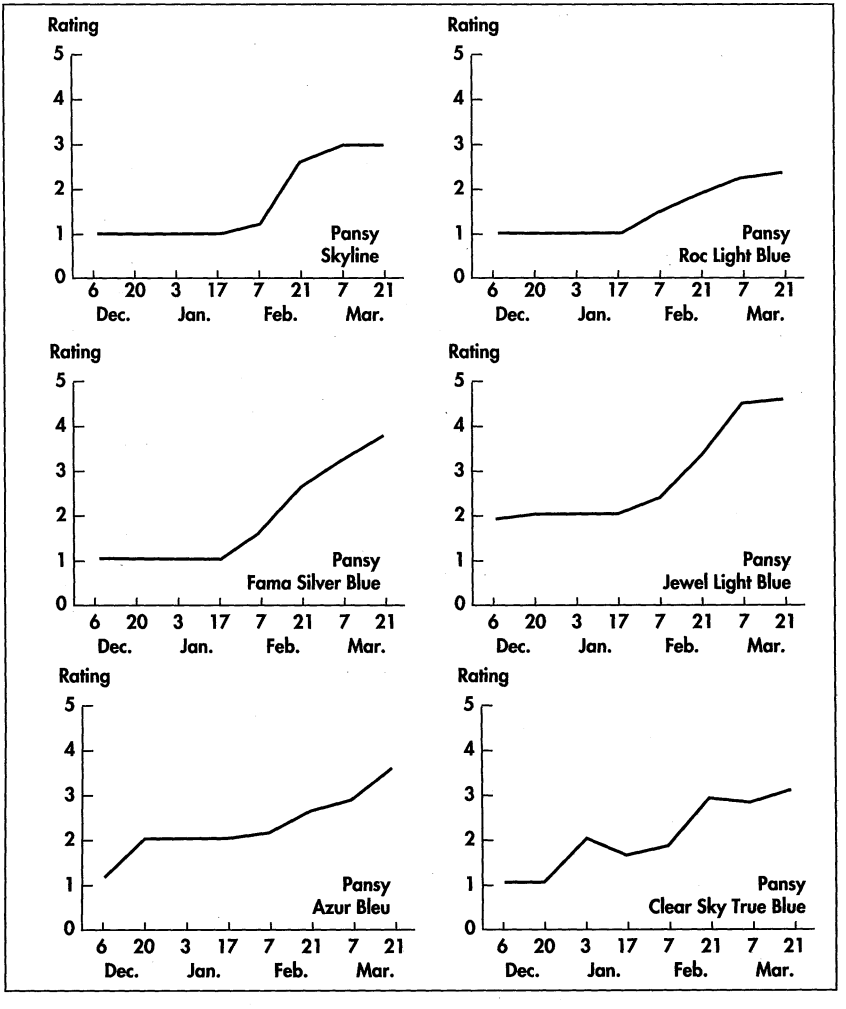
'Princess White,' 'Pink,' and 'Purple' were the earliest of the dianthus cultivars to show significant development. Foliage was fairly uniform and healthy in appearance. These cultivars exhibited good development of foliage and floral display particularly by late March.

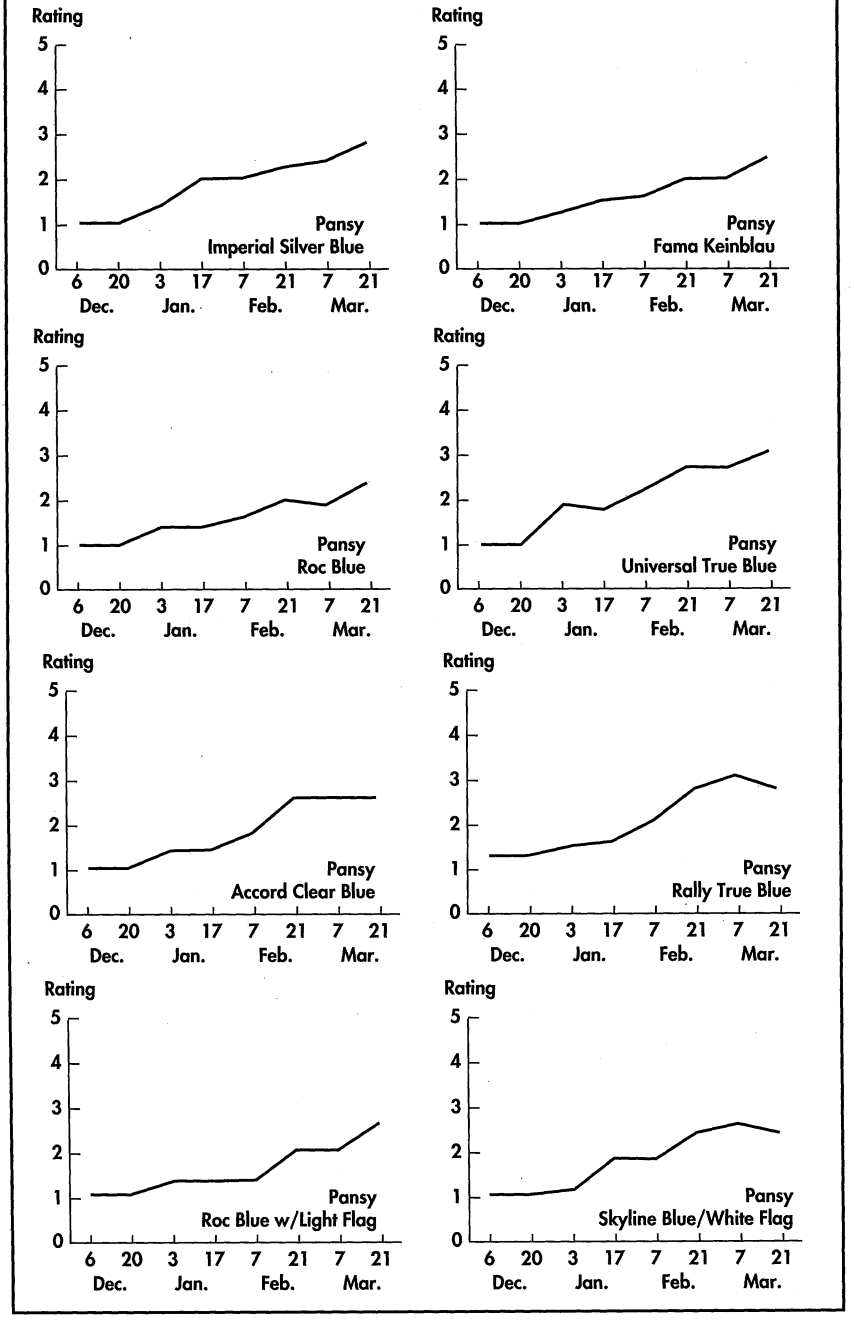
While slower to develop in mid-winter, 'Princess Crimson,' 'Telstar Mixture,' and 'First Love' came on strong in late February and early March to yield an adequate to attractive foliar and floral display.

RATINGS

Plants were evaluated twice monthly from Dec. 6, 1993, through March 21, 1994. They were rated each time by the same person using a 1-5 scale. Flowering plants were rated primarily on their floral display, but size, shape, and freedom from insect or disease blemishes were also considered. Kale was rated without consideration of flowering.

RATING SYSTEM: 0 = plant died; 1 = small display of foliage with no flowers; 2 = adequate foliage with no flowers or few buds showing; 3 = adequate to large amount of foliage and a relatively small floral display; 4 = sufficient foliage and floral display to be attractive in the landscape; and 5 = superior floral display and sufficient foliage display. Ratings were made in whole number units. Display was defined by size and color of the leaves.

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Pansy
Roc Blue
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Rally True Blue
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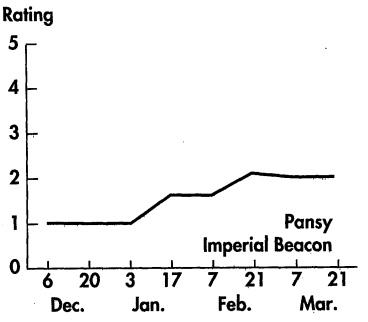
Roc Blue w/Light Flag
Pansy
Skyline Blue/White Flag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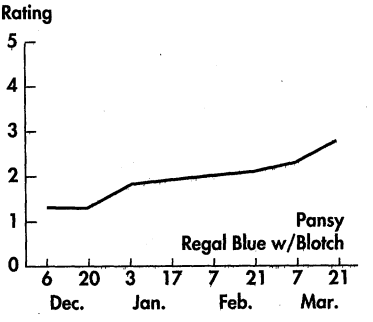
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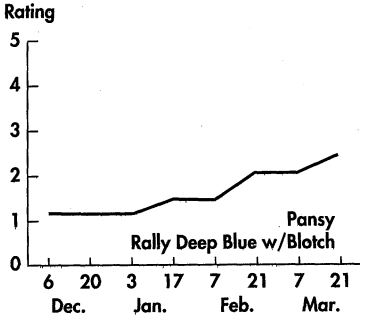
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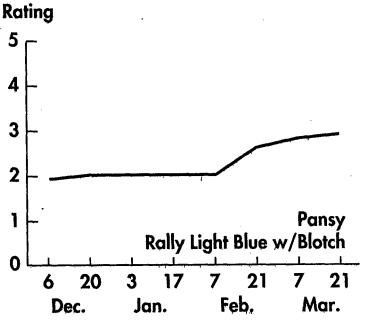
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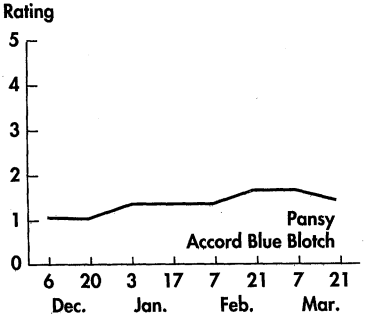
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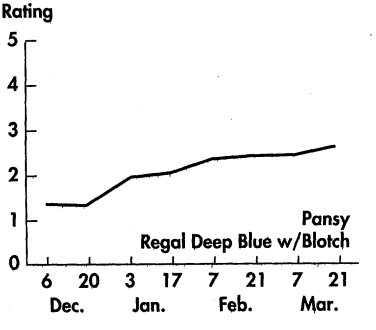
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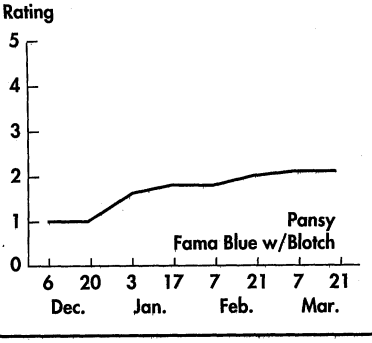
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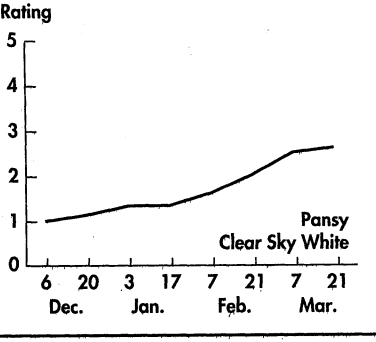
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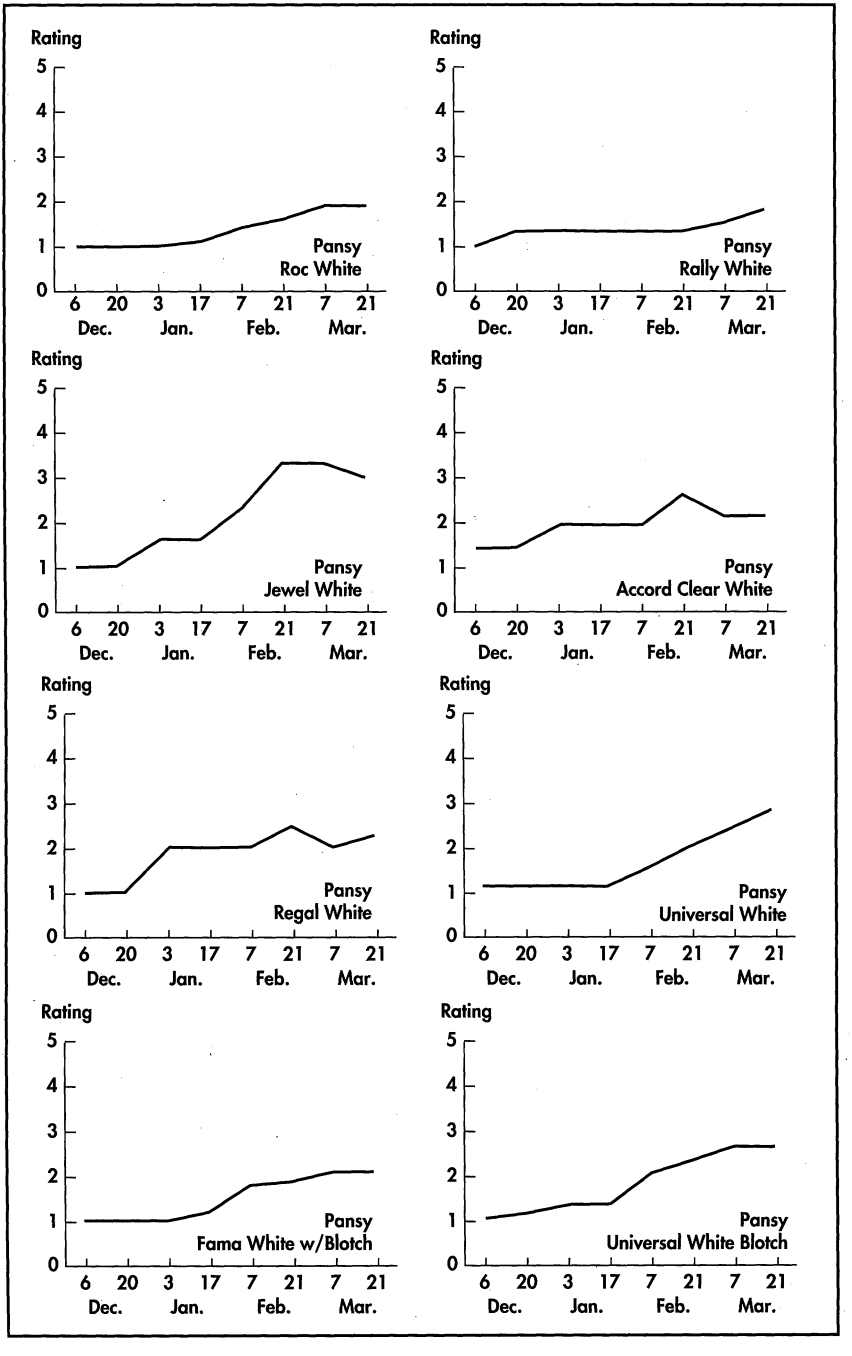
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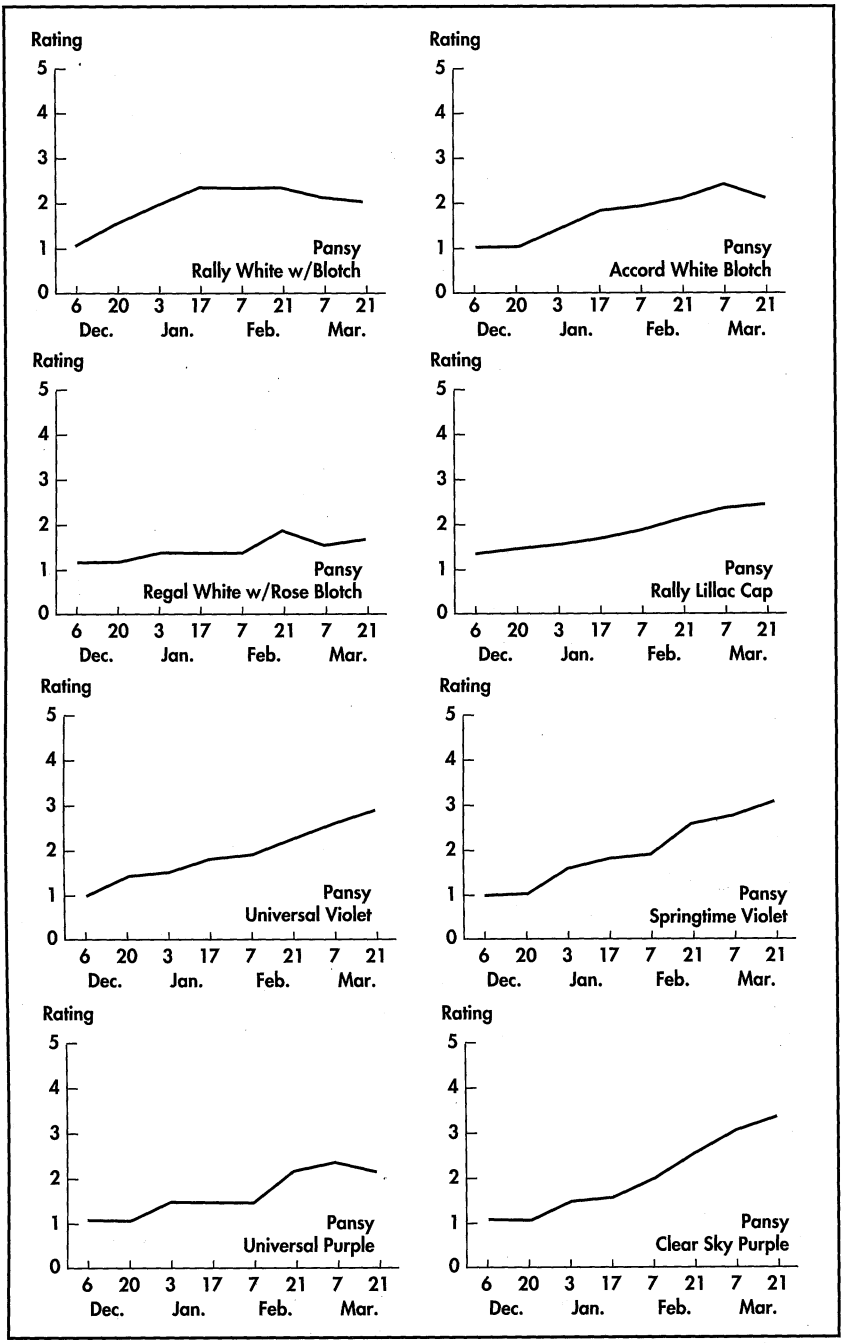
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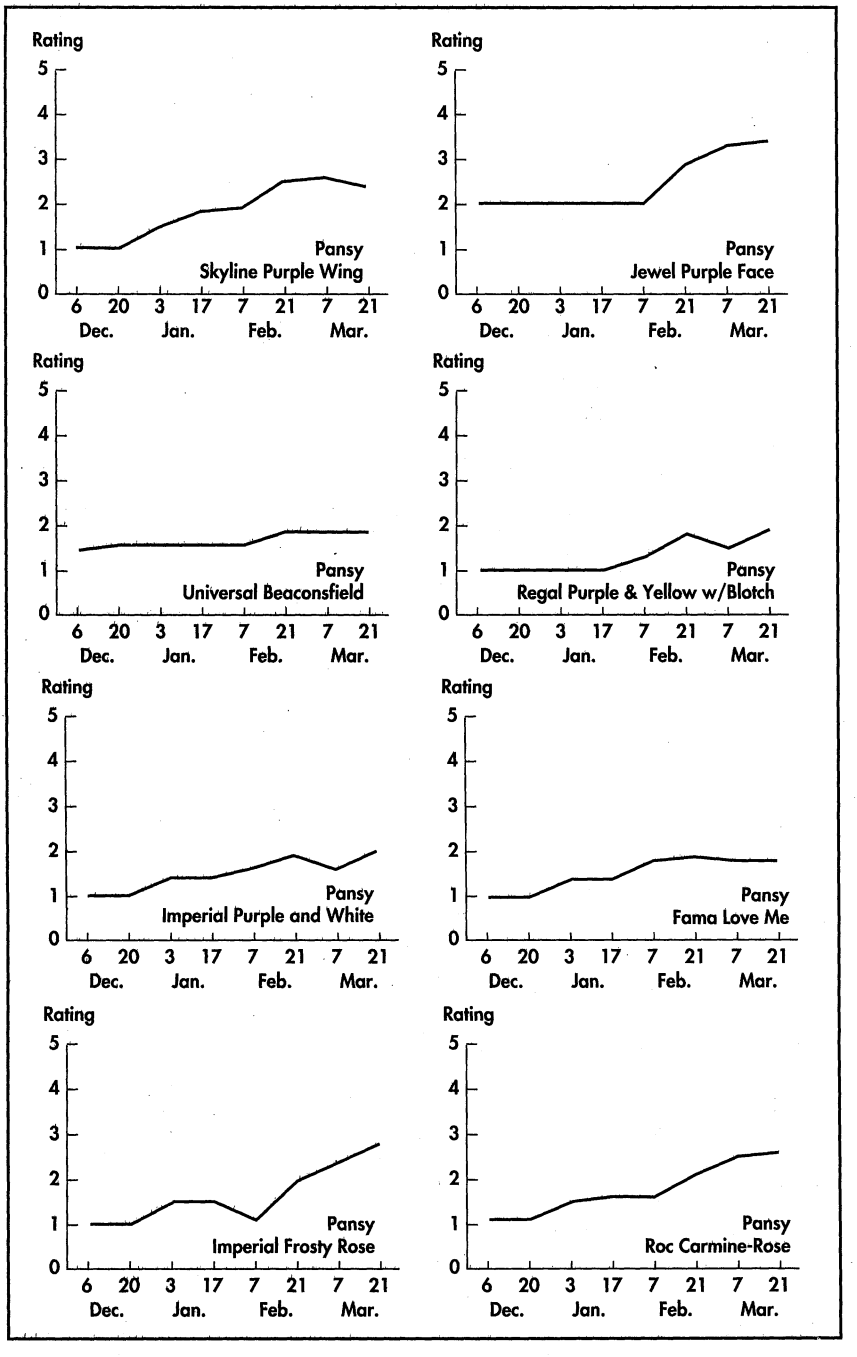
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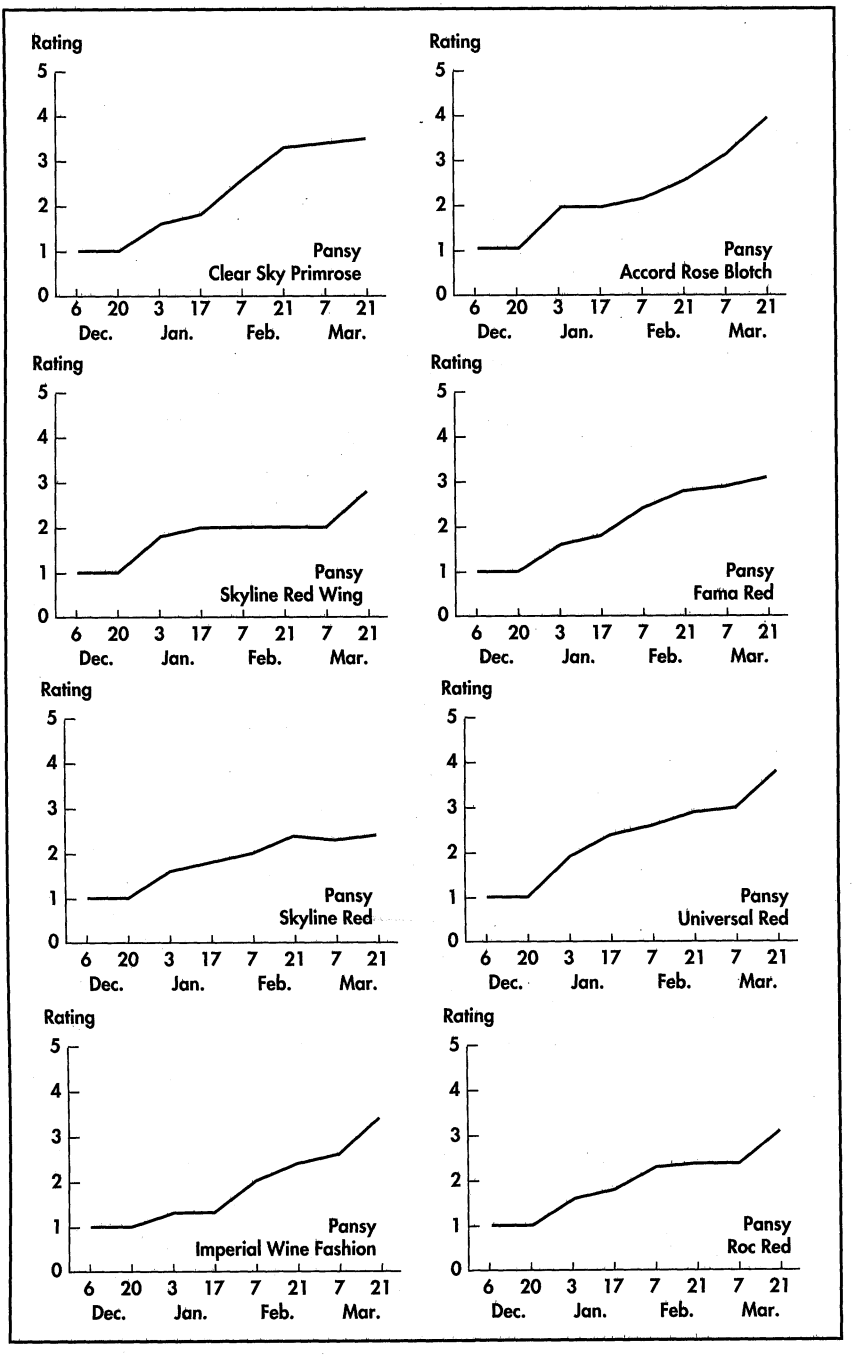
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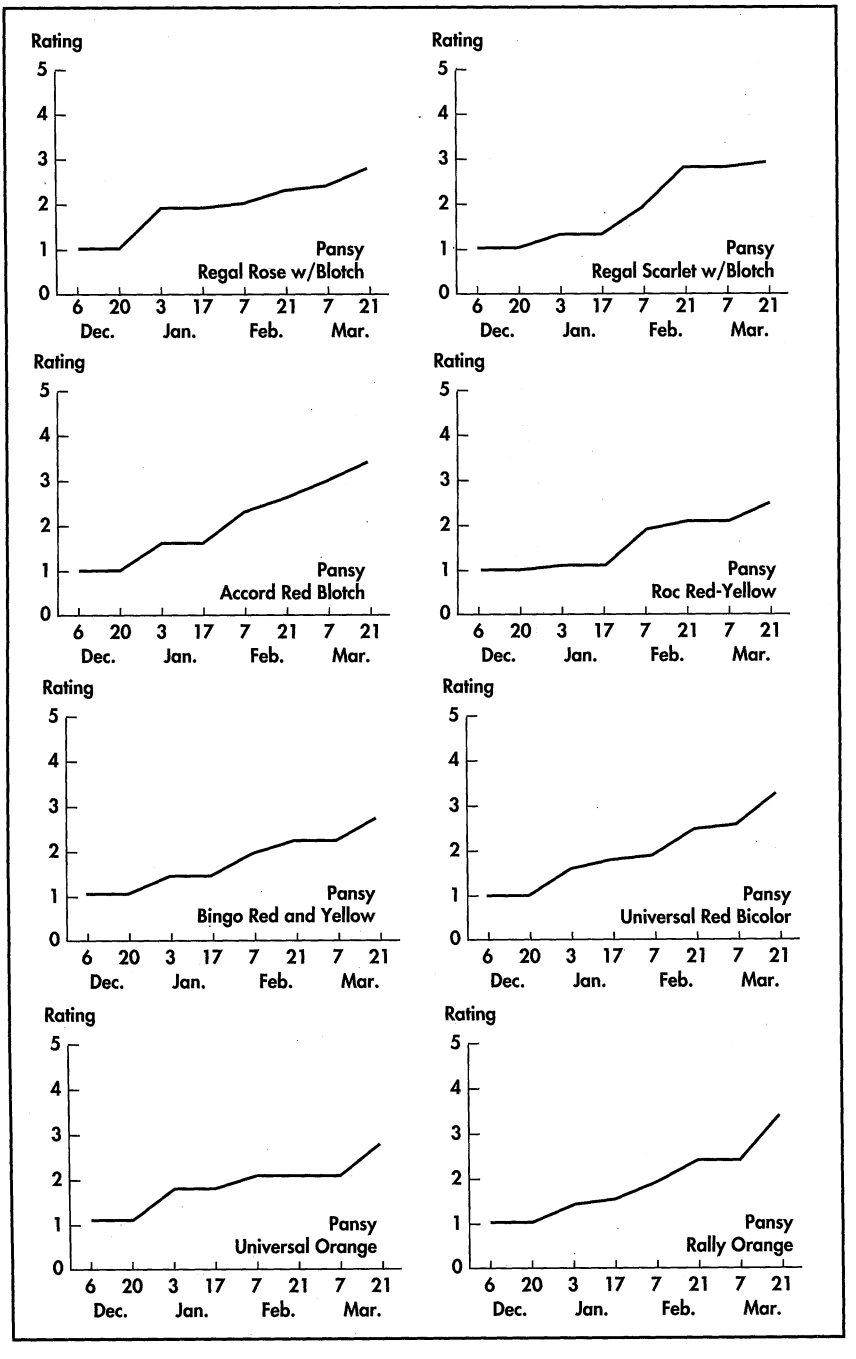
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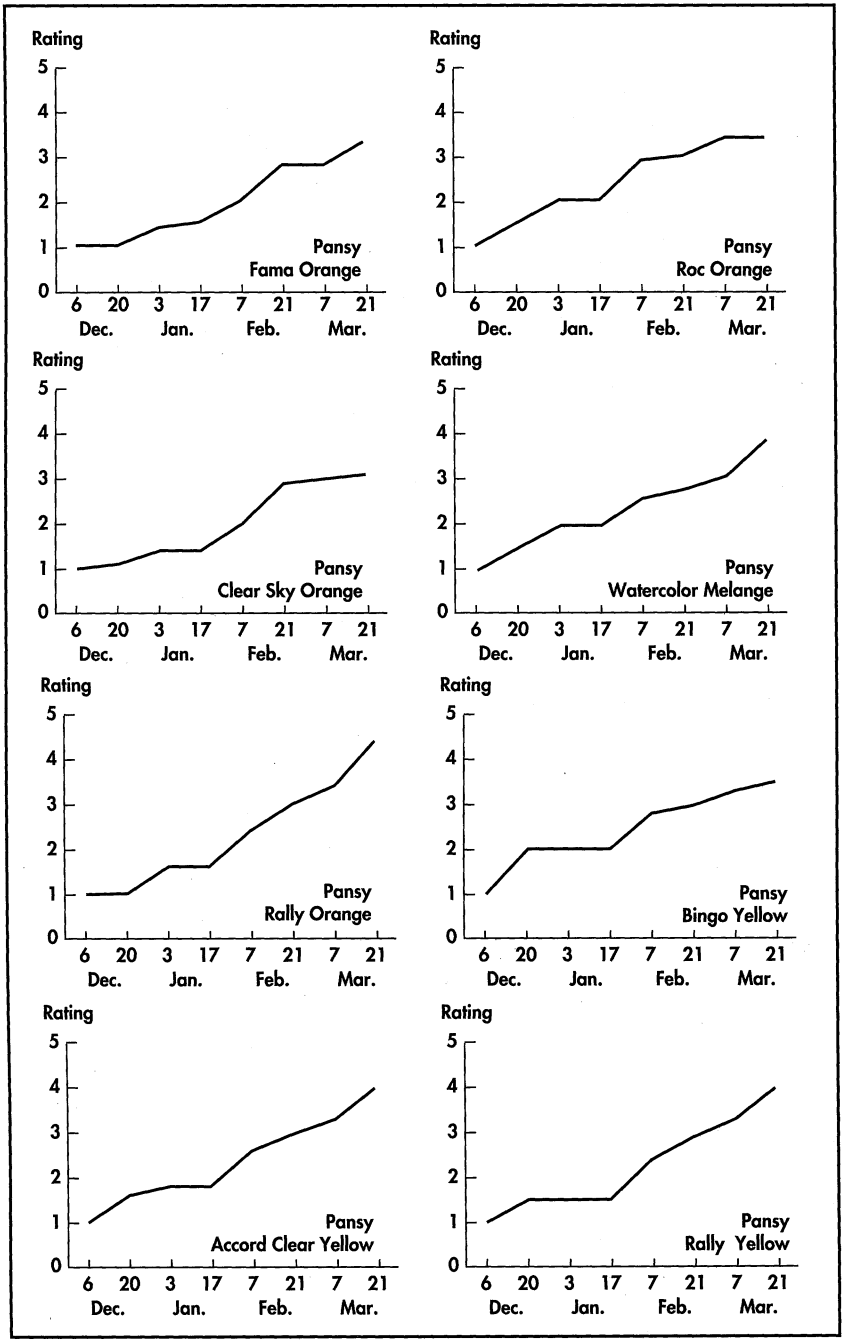
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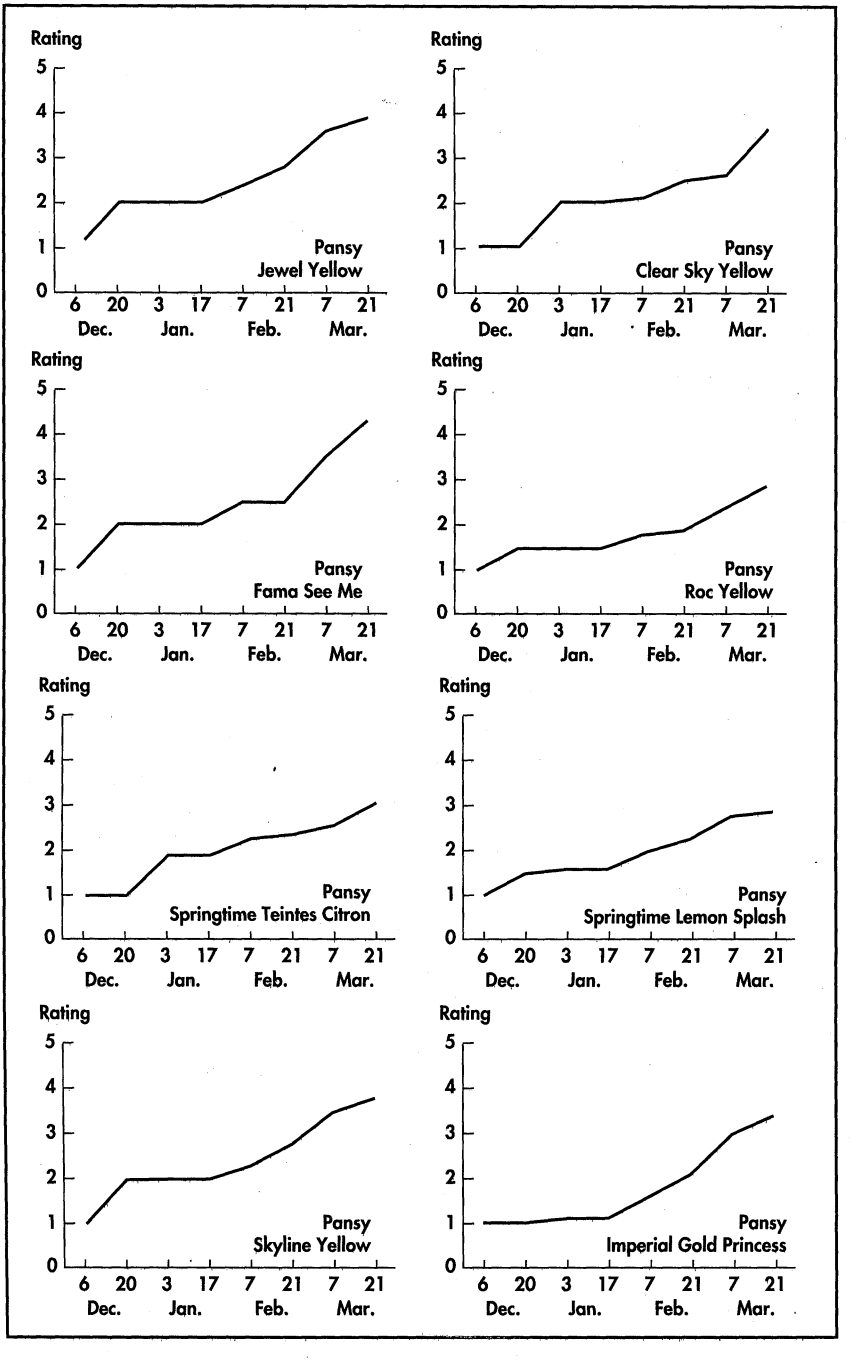
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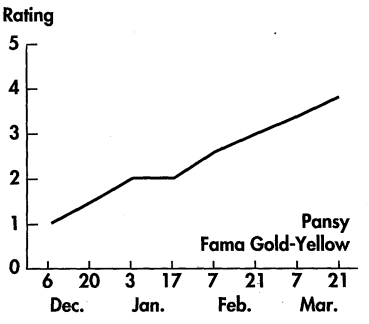
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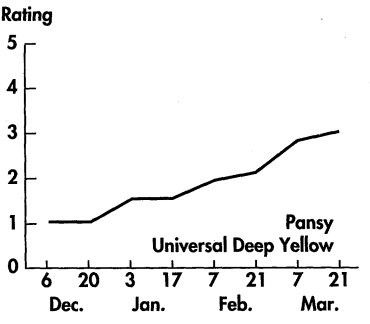
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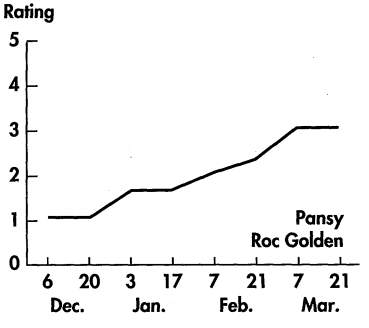
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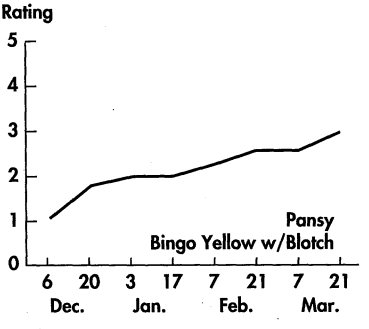
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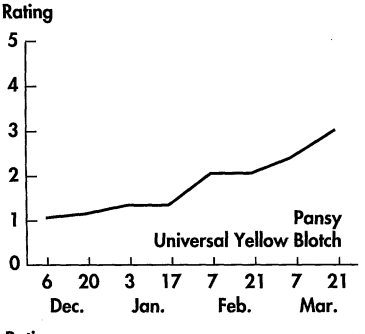
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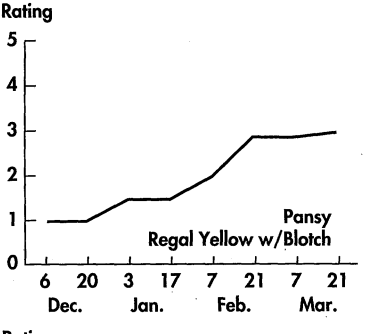
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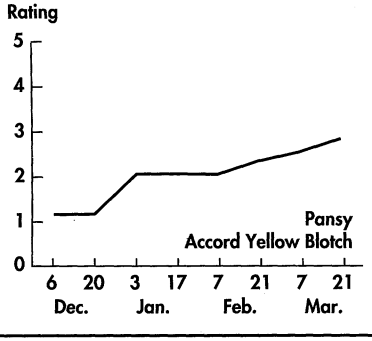
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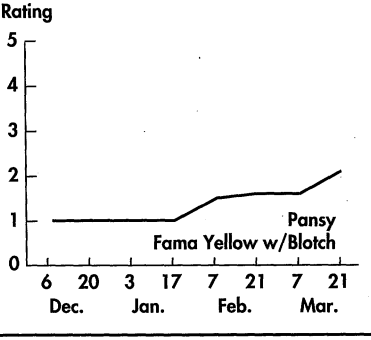
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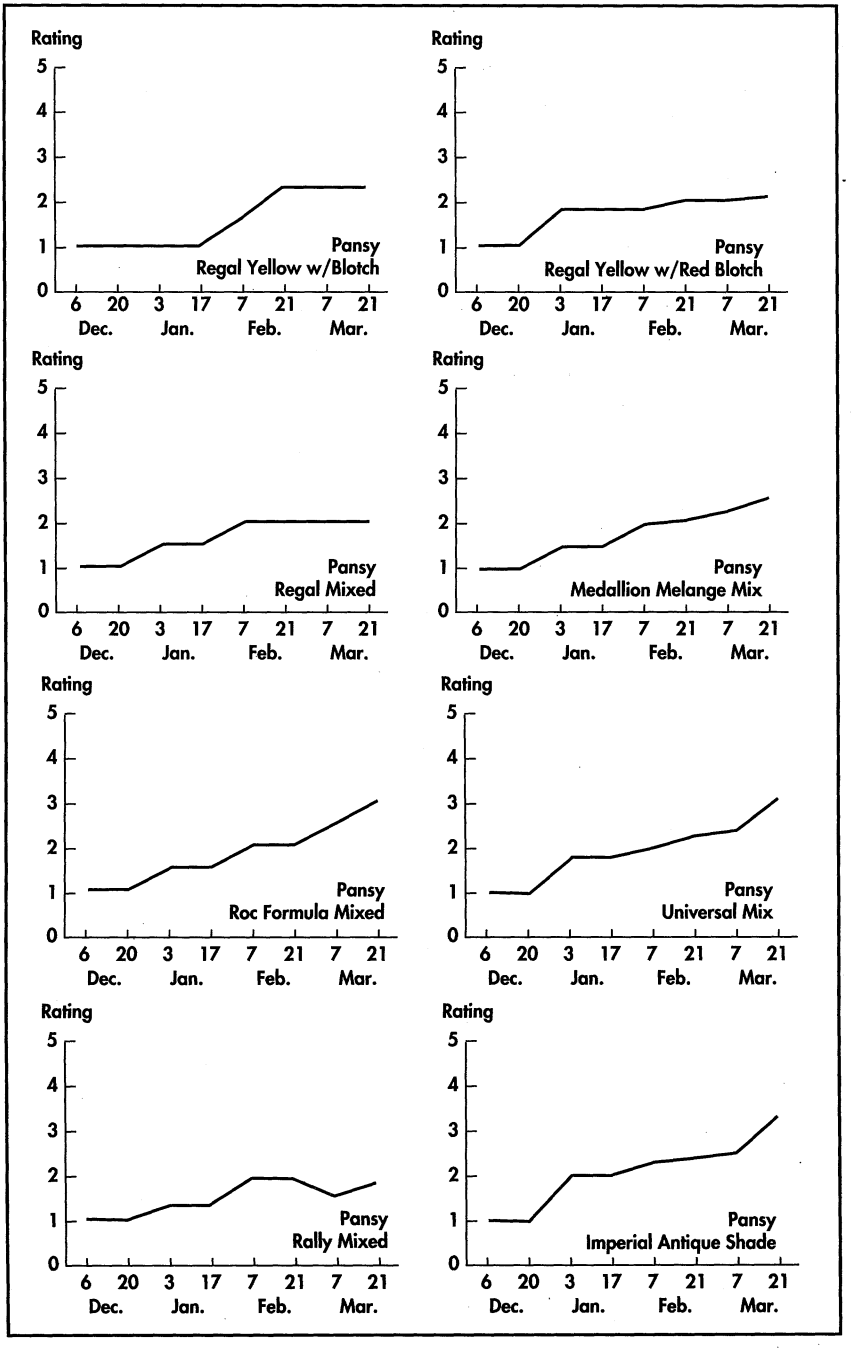
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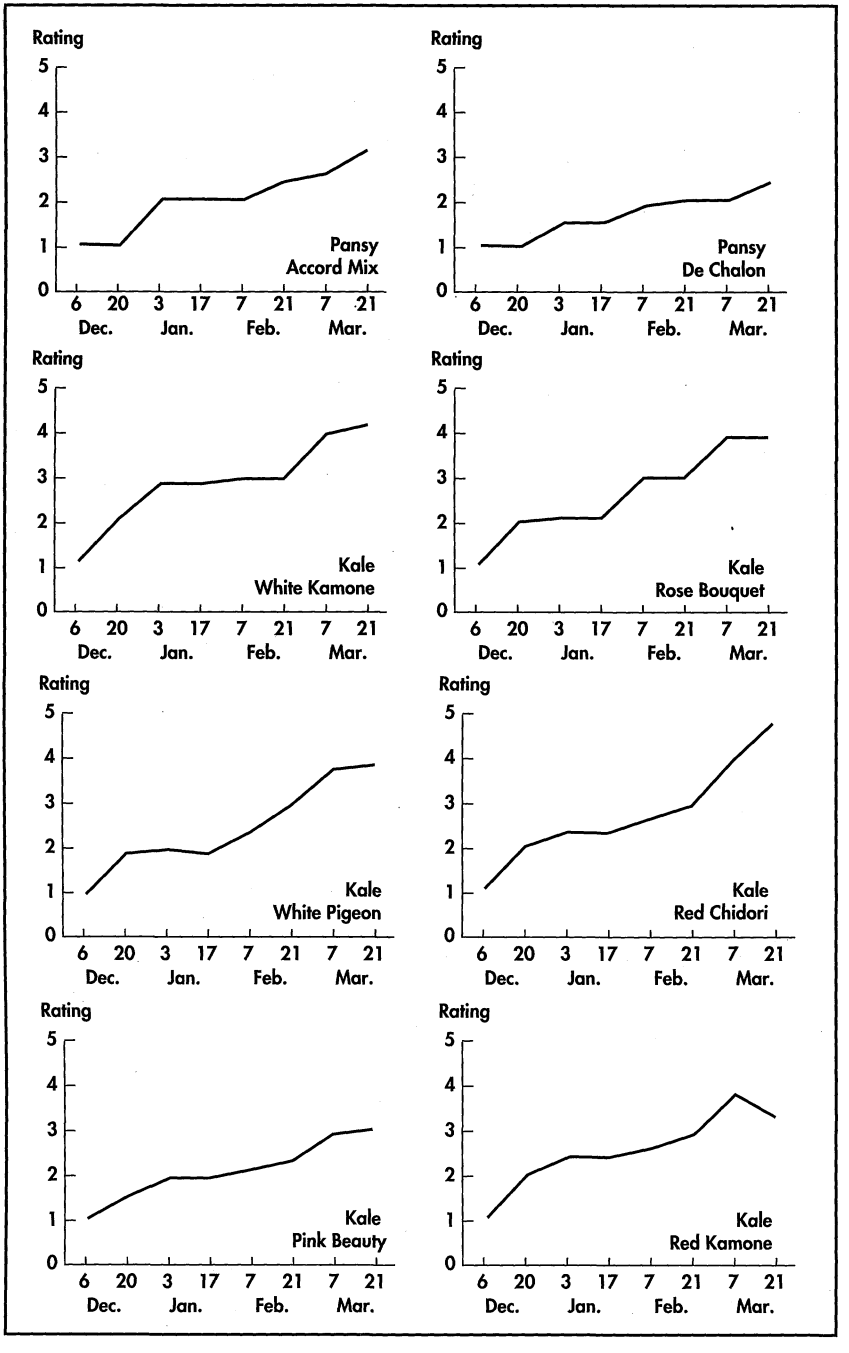
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Dec. Jan. Feb. Mar.
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Accord Mix
Rating
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2
1
0
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Dec. Jan. Feb. Mar.
Pansy
De Chalon
Rating
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4
3
2
1
0
6 20 3 17 7 21 7 21
Dec. Jan. Feb. Mar.
Kale
White Kamone
Rating
5
4
3
2
1
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6 20 3 17 7 21 7 21
Dec. Jan. Feb. Mar.
Kale
Rose Bouquet
Rating
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4
3
2
1
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Dec. Jan. Feb. Mar.
Kale
White Pigeon
Rating
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3
2
1
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Dec. Jan. Feb. Mar.
Kale
Red Chidori
Rating
5
4
3
2
1
0
6 20 3 17 7 21 7 21
Dec. Jan. Feb. Mar.
Kale
Pink Beauty
Rating
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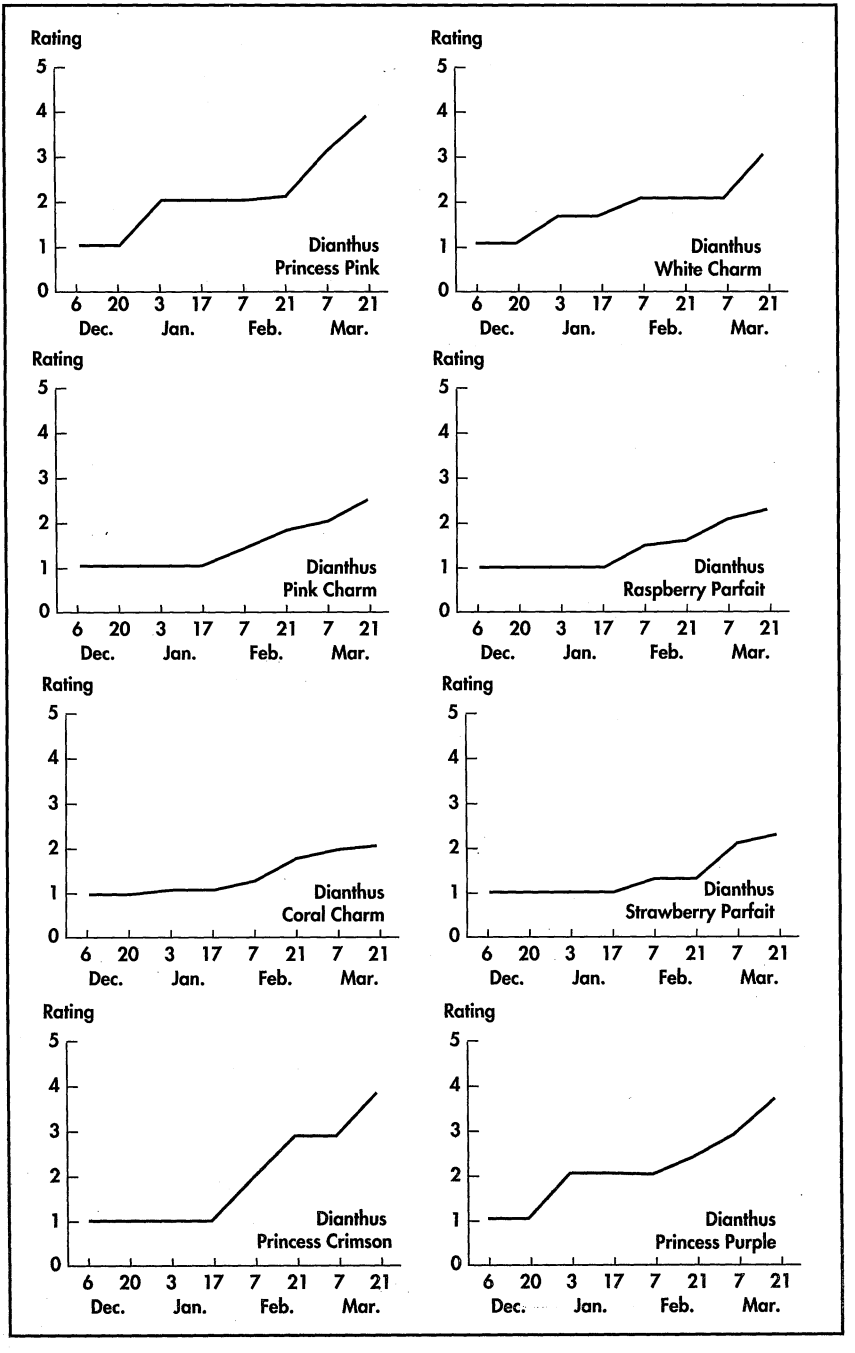
Kale
Red Kamone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Dec. Jan. Feb. Mar.
Rating
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Rating
Dianthus
Pink Charm
Rating
Dianthus
Raspberry Parfait
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Rating
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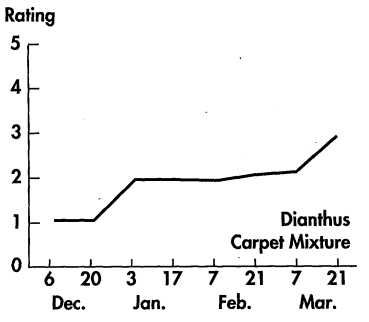
Princess Purple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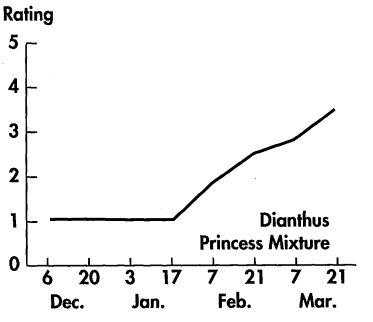
Dec. Jan. Feb. Mar.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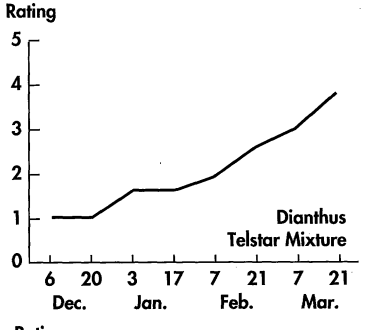
Dec. Jan. Feb. Mar.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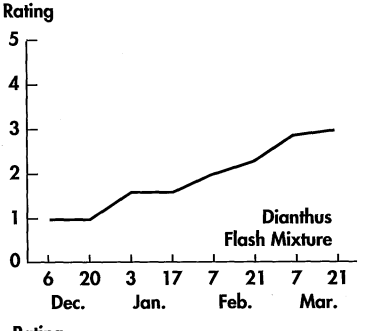
Dec. Jan. Feb. Mar.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Dianthus
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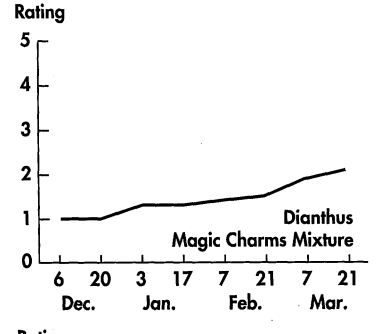
Dec. Jan. Feb. Mar.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Dianthus
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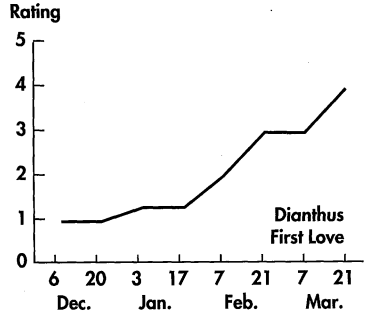
Dec. Jan. Feb. Mar.


Rating
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Dianthus
First Love
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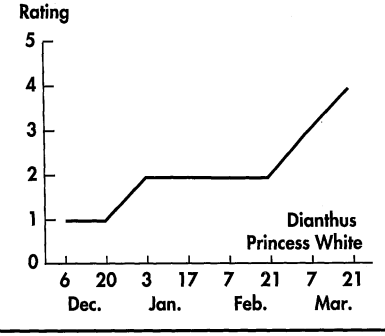
Dec. Jan. Feb. Mar.


Rating
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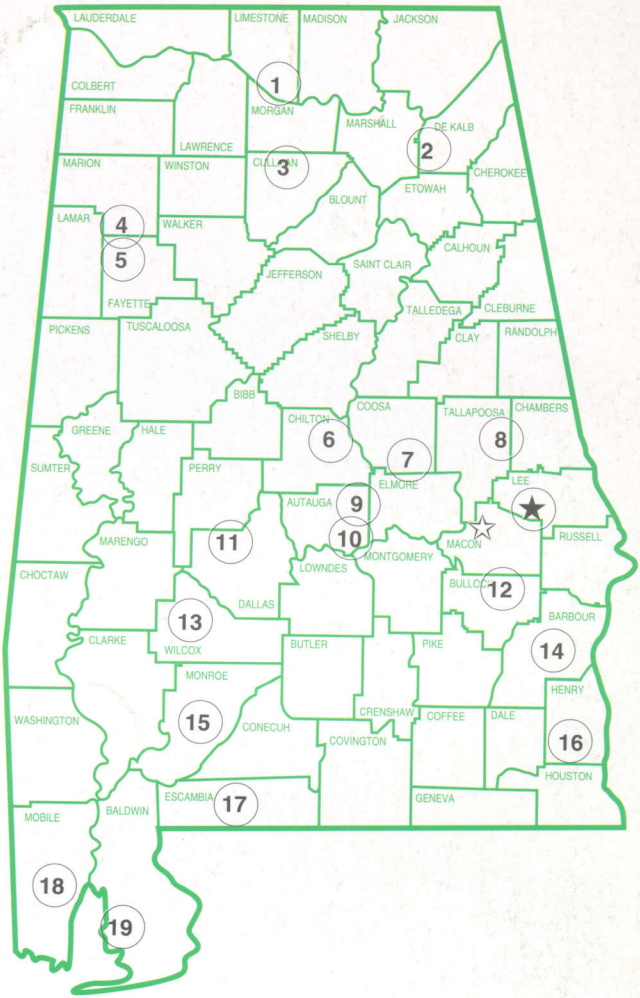
Dianthus
Princess White
6 20 3 17 7 21 7 21
Dec. Jan. Feb. Mar.

ACKNOWLEDGEMENTS

David and Martha Wright of Wright's Nursery, Inc., in Plantersville, Ala., donated time, expertise, facilities, and supplies to produce the plugs and transplants for this project. American Takii (Takii), Benary, Clause, Goldsmith (Gold), Pan American Seeds (PanAm), Sakata, and Sluis & Groot (S&G) donated seed. Staff members at the E.V. Smith Research Center rated the plants.

Alabama's Agricultural Experiment Station System
AUBURN UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, livestock, forestry, and horticultural producers in each region in Alabama. Every citizen of the state has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

★ Main Agricultural Experiment Station, Auburn.

☆ E. V. Smith Research Center, Shorter.

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Chilton Area Horticulture Substation, Clanton.
7. Forestry Unit, Coosa County.
8. Piedmont Substation, Camp Hill.
9. Foresty Unit, Autauga County.
10. Prattville Experiment Field, Prattville.
11. Black Belt Substation, Marion Junction.
12. The Turnipseed-Ikenberry Place, Union Springs.
13. Lower Coastal Plain Substation, Camden.
14. Forestry Unit, Barbour County.
15. Monroeville Experiment Field, Monroeville.
16. Wiregrass Substation, Headland.
17. Brewton Experiment Field, Brewton.
18. Ornamental Horticulture Substation, Spring Hill.
19. Gulf Coast Substation, Fairhope.